

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A manufacturing method of a D/A converter circuit, comprising the steps of:

forming a resistor string which includes a plurality of resistors connected in series between reference voltages;

forming a plurality of switching elements, each of the plurality of switching elements being connected with a connection node of corresponding one of the plurality of resistors;

disposing all forming parts of the resistors configuring the resistor string within a laser irradiation area; and

crystallizing all the forming parts of the resistors which are disposed within the laser irradiation area with a same laser shot,

wherein each of the resistors is a thin film element crystallized by linear laser irradiation.

2. (Original) The manufacturing method of a D/A converter circuit according to claim 1, wherein each forming part of the resistors is disposed to be parallel with each other, and also to be parallel with a scan direction of the linear laser irradiation.

3. (Original) The manufacturing method of a D/A converter circuit according to claim 1, wherein each forming part of the resistors is all formed to have a same shape.

4. (Original) A manufacturing method of a D/A converter circuit, comprising the steps of:

forming a resistor string which includes a plurality of resistor groups connected in series between reference voltages;

forming a plurality of resistors which are connected in series to configure each of the resistor groups;

forming a plurality of switching elements, each of the plurality of switching elements being connected with a connection node of corresponding one of the plurality of resistors;

disposing forming parts of the series-connected resistors of each resistor group within each different laser irradiation area;

crystallizing all the forming parts of the resistors which are disposed within the laser irradiation area with a same laser shot; and

disposing auxiliary resistors so as to be connected in parallel with each resistor group,

wherein each of the resistors is a thin film element crystallized by linear laser irradiation;

wherein each of the auxiliary resistors has a same resistance value that is sufficiently smaller than a combined resistance value of the resistor group to which each auxiliary resistor is connected.

5. (Original) The manufacturing method of a D/A converter circuit according to claim 4, wherein:

each of the auxiliary resistors is a thin film element crystallized by laser irradiation;

all forming parts of the auxiliary resistors are disposed within a laser irradiation area; and

all the forming parts of the auxiliary resistors which are disposed within the laser irradiation area are crystallized with a same laser shot.

6. (Original) The manufacturing method of a D/A converter circuit according to claim 4, wherein each forming part of the resistors is disposed to be parallel with each other, and also to be parallel with a scan direction of the linear laser irradiation.

7. (Original) The manufacturing method of a D/A converter circuit according to claim 4, wherein each forming part of the resistors is all formed to have a same shape.

8. (Original) A manufacturing method of a D/A converter circuit, comprising the steps of:

forming a resistor string which includes a plurality of resistors connected in series between reference voltages;

forming a plurality of switching elements, each of the plurality of switching elements being connected with a connection node of corresponding one of the plurality of resistors;

disposing all forming parts of the resistors configuring the resistor string within a laser irradiation area; and

crystallizing all the forming parts of the resistors which are disposed within the laser irradiation area with one laser shot,

wherein each of the resistors is a thin film element crystallized by linear laser irradiation.

9. (Original) The manufacturing method of a D/A converter circuit according to claim 8, wherein each forming part of the resistors is disposed to be parallel with each other.

10. (Original) The manufacturing method of a D/A converter circuit according to claim 8, wherein each forming part of the resistors is all formed to have a same shape.

11. (Original) A manufacturing method of a D/A converter circuit, comprising the steps of:

forming a resistor string which includes a plurality of resistor groups connected in series between reference voltages;

forming a plurality of resistors which are connected in series to configure each of the resistor groups;

forming a plurality of switching elements, each of the plurality of switching elements being connected with a connection node of corresponding one of the plurality of resistors;

disposing forming parts of the series-connected resistors of each resistor group within each different laser irradiation area;

crystallizing all the forming parts of the resistors which are disposed within the laser irradiation area with one laser shot;

disposing auxiliary resistors so as to be connected in parallel with each resistor group,

wherein each of the resistors is a thin film element crystallized by linear laser irradiation;

wherein each of the auxiliary resistors has a same resistance value that is sufficiently smaller than a combined resistance value of the resistor group to which each auxiliary resistor is connected.

12. (Original) The manufacturing method of a D/A converter circuit according to claim 11, wherein:

each of the auxiliary resistors is a thin film element crystallized by laser irradiation;

all forming parts of the auxiliary resistors are disposed within a laser irradiation area; and

all the forming parts of the auxiliary resistors which are disposed within the laser

irradiation area are crystallized with one laser shot.

13. (Original) The manufacturing method of a D/A converter circuit according to claim 11, wherein each forming part of the resistors is disposed to be parallel with each other.

14. (Original) The manufacturing method of a D/A converter circuit according to claim 11, wherein each forming part of the resistors is all formed to have a same shape.

15. (Original) A manufacturing method of a semiconductor device incorporating a D/A converter circuit, comprising the steps of:

forming a resistor string which includes a plurality of resistors connected in series between reference voltages;

forming a plurality of switching elements, each of the plurality of switching elements being connected with a connection node of corresponding one of the plurality of resistors;

disposing all forming parts of the resistors configuring the resistor string within a laser irradiation area; and

crystallizing all the forming parts of the resistors which are disposed within the laser irradiation area with a same laser shot.

wherein each of the resistors is a thin film element crystallized by linear laser irradiation;

16. (Original) The manufacturing method of a semiconductor device incorporating a D/A converter circuit according to claim 15, wherein each forming part of the resistors is disposed to be parallel with each other, and also to be parallel with a scan direction of the linear laser irradiation.

17. (Original) The manufacturing method of a semiconductor device incorporating a D/A converter circuit according to claim 15, wherein each forming part of the resistors is all formed to have a same shape.

18. (Original) A manufacturing method of a semiconductor device incorporating a D/A converter circuit, comprising the steps of:

forming a resistor string which includes a plurality of resistor groups connected in series between reference voltages;

forming a plurality of resistors so as to be connected in series to configure each of the resistor groups;

forming a plurality of switching elements, each of the plurality of switching elements being connected with a connection node of corresponding one of the plurality of resistors;

disposing forming parts of the series-connected resistors of each resistor group within each different laser irradiation area;

crystallizing all the forming parts of the resistors which are disposed within the laser irradiation area with a same laser shot; and

disposing auxiliary resistors so as to be connected in parallel with each resistor group,

wherein each of the resistors is a thin film element crystallized by linear laser irradiation;

wherein each of the auxiliary resistors has a same resistance value that is sufficiently smaller than a combined resistance value of the resistor group to which each auxiliary resistor is connected.

19. (Original) The manufacturing method of a semiconductor device incorporating a D/A converter circuit according to claim 18, wherein:

each of the auxiliary resistors is a thin film element crystallized by laser

irradiation;

all forming parts of the auxiliary resistors are disposed within a laser irradiation area; and

all the forming parts of the auxiliary resistors which are disposed within the laser irradiation area are crystallized with a same laser shot.

20. (Original) The manufacturing method of a semiconductor device incorporating a D/A converter circuit according to claim 18, wherein each forming part of the resistors is disposed to be parallel with each other, and also to be parallel with a scan direction of the linear laser irradiation.

21. (Original) The manufacturing method of a semiconductor device incorporating a D/A converter circuit according to claim 18, wherein each forming part of the resistors is all formed to have a same shape.

22. (Original) A manufacturing method of a semiconductor device incorporating a D/A converter circuit, comprising the steps of:

forming a resistor string which includes a plurality of resistors connected in series between reference voltages;

forming a plurality of switching elements, each of the plurality of switching elements being connected with a connection node of corresponding one of the plurality of resistors;

disposing all forming parts of the resistors configuring the resistor string within a laser irradiation area; and

crystallizing all the forming parts of the resistors which are disposed within the laser irradiation area with one laser shot.

wherein each of the resistors is a thin film element crystallized by linear laser irradiation;

23. (Original) The manufacturing method of a semiconductor device incorporating a D/A converter circuit according to claim 22, wherein each forming part of the resistors is disposed to be parallel with each other.

24. (Original) The manufacturing method of a semiconductor device incorporating a D/A converter circuit according to claim 22, wherein each forming part of the resistors is all formed to have a same shape.

25. (Original) A manufacturing method of a semiconductor device incorporating a D/A converter circuit, comprising the steps of:

forming a resistor string which includes a plurality of resistor groups connected in series between reference voltages;

forming a plurality of switching elements, each of the plurality of switching elements being connected with a connection node of corresponding one of the plurality of resistors;

disposing forming parts of the series-connected resistors of each resistor group within each different laser irradiation area;

crystallizing all the forming parts of the resistors which are disposed within the laser irradiation area with one laser shot; and

disposing auxiliary resistors so as to be connected in parallel with each resistor group,

wherein each of the resistors is a thin film element crystallized by linear laser irradiation;

wherein each of the auxiliary resistors has a same resistance value that is sufficiently smaller than a combined resistance value of the resistor group to which each auxiliary resistor is connected.



26. (Original) The manufacturing method of a semiconductor device incorporating a D/A converter circuit according to claim 25, wherein:

each of the auxiliary resistors is a thin film element crystallized by laser irradiation;

all forming parts of the auxiliary resistors are disposed within a laser irradiation area; and

all the forming parts of the auxiliary resistors which are disposed within the laser irradiation area are crystallized with one laser shot.

27. (Original) The manufacturing method of a semiconductor device incorporating a D/A converter circuit according to claim 25, wherein each forming part of the resistors is disposed to be parallel with each other.

28. (Original) The manufacturing method of a semiconductor device incorporating a D/A converter circuit according to claim 25, wherein each forming part of the resistors is all formed to have a same shape.

29.-69. (Canceled)